Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (original) A data storage device comprising an approximate matching and pre-fetch processor connected to a storage medium.

2. (original) The data storage device of claim 1 wherein the approximate matching and pre-fetch processor includes an approximate matching unit connected to the storage medium and a logic device connected to the approximate matching unit.

3. (original) The data storage device of claim 2 wherein said logic device comprises a data processor.

4. (original) The data storage device of claim 3 wherein said logic device comprises a digital data processor.

5. (original) The data storage device of claim 4 wherein said digital data processor comprises a microprocessor programmed to accept search inquiries from another digital data processor, interpret said search inquiries and translate them for determining an associated key therewith, and transmit a search inquiry and the determined key to the approximate matching unit.

6. (original) The data storage device of claim 4 wherein said digital data processor comprises a programmable logic device programmed to accept search inquiries from another digital data processor, interpret said search inquiries and translate them for determining an associated key therewith, and transmit a search inquiry and the determined key to the approximate matching unit.

7. (original) The data storage device of claim 5 wherein the approximate matching unit comprises a comparator for comparing the determined key with data read from the storage medium and determining a match therebetween.

8. (original) The data storage device of claim 6 wherein the approximate matching unit comprises a comparator for comparing the determined key with data read from the storage medium and determining a match therebetween.

9. (currently amended) A retrieval device for retrieving data from a mass storage medium including a matching circuit for comparing a determined key representative of the data sought to be retrieved with a data signal representative of a continuous stream of data read from said mass storage medium, said determined key being an analog signal ~~representative of the data itself~~ and the data signal also being an analog signal.

10. (original) The retrieval device of claim 9 further comprising a memory connected to said retrieval device for storing said retrieved data for access by another processor.

11. (original) The retrieval device of claim 9 wherein said retrieval device is directly coupled to said mass storage medium and interfacing said mass storage medium with a processor desiring said retrieved data for processing thereof.

12. (original) A retrieval device for retrieving data from a mass storage medium, said retrieval device being directly coupled to said mass storage medium and interfacing said mass storage medium with a processor desiring said retrieved data for processing thereof, said retrieval device comprising a matching circuit for making a pattern comparison between a determined key representative of the data sought to be retrieved with a data signal representative of a continuous stream of data read from said mass storage medium.

13. (original) The retrieval device of claim 12 further comprising a memory connected to said retrieval device for storing said retrieved data for access by said processor.

14. (original) The retrieval device of claim 12 wherein said matching circuit is configured to match a digital key with a digital data signal.

15. (original) The retrieval device of claim 14 further comprising a plurality of mass storage media coupled to said matching circuit.

16. (original) The retrieval device of claim 12 wherein said matching circuit is configured to match an analog signal key with an analog data signal.

17. (original) The retrieval device of claim 16 further comprising a plurality of mass storage media coupled to said matching circuit.

18. (original) A retrieval device for retrieving data from a mass storage medium, said retrieval device being directly coupled to said mass storage medium and interfacing said mass storage medium with a computer network desiring said retrieved data for processing thereof, said retrieval device comprising an approximate matching circuit for making a pattern comparison between a determined key representative of the data sought to be retrieved with a data signal representative of a continuous stream of data read from said mass storage medium.

19. (original) The device of claim 18 further comprising a memory connected to said retrieval device for storing said retrieved data for access by said computer network.

20. (original) A computer having a main processor, a working memory, a supplemental memory, and an approximate matching and pre-fetch processor, said pre-fetch processor being directly coupled to said supplemental memory and configured to match a determined key representative of data sought to be retrieved from said supplemental memory with a data signal representative of a continuous stream of data read from said supplemental memory.

21. (original) A computer having a main processor, a working memory, a supplemental memory, and a circuit coupled to said supplemental memory for pattern matching a key to a continuous stream of data read from said supplemental memory.

22. (original) A network attached mass storage device (NASD), said NASD comprising a mass storage device coupled to an approximate matching and pre-fetch processor, said NASD having a network addressable input/output port for receiving data inquiries and responding thereto.

23. (original) A network attached mass storage device (NASD), said NASD comprising a mass storage device coupled to a circuit for pattern matching a key to a continuous stream of data read from said mass storage memory, and said NASD having a network addressable input/output port for receiving data inquiries and responding thereto.

24. (canceled)

25. (canceled)

26. (canceled)

27. (canceled)

28. (canceled)

29. (canceled)

30. (canceled)

31. (original) An intelligent mass storage medium device, said device having a circuit for making a pattern comparison between a key and a signal representative of a continuous read of data from a data storage medium.

32. (original) The device of claim 31 wherein said pattern comparison circuit comprises an approximate matching and pre-fetch processor coupled to an approximate matching unit.

33. (original) The retrieval device of claim 9 further comprising a memory connected to said retrieval device for storing a digital representation of said retrieved data for access by another processor.

34. (currently amended) A retrieval device for retrieving data from a mass storage medium including a matching circuit for framelessly comparing and correlating a determined key representative of the data sought to be retrieved with a data signal representative of a continuous stream of data read from said mass storage medium, said determined key being a digital representation of the data itself and the data signal also being digital.

35. (original) The retrieval device of claim 34 further comprising a memory connected to said retrieval device for storing said retrieved data for access by another processor.

36. (original) The retrieval device of claim 34 wherein said retrieval device is directly coupled to said mass storage medium and interfacing said mass storage medium with a processor desiring said retrieved data for processing thereof.

37. (original) The data storage device of claim 1 wherein the approximate matching and pre-fetch processor includes an approximate matching unit, the storage medium includes at least one storage surface, a digital decoder in circuit with an output of said surface, and the approximate matching unit is connected between said storage surface and the digital decoder.

38. (original) The data storage device of claim 1 wherein the approximate matching and pre-fetch processor includes an approximate matching unit, the storage medium includes at least one storage surface, a digital decoder in circuit with an output of said surface, and the approximate matching unit is connected to an output of the digital decoder.

39. (original) The data storage device of claim 1 wherein the approximate matching and pre-fetch processor includes an approximate matching unit, the storage medium includes at least one storage surface, a digital decoder in circuit with an output of said surface, an error

correction circuit in circuit with the output of said digital decoder, and the approximate matching unit is connected to an output of the error correction circuit.

40. (original) The retrieval device of claim 12 wherein said matching circuit is configured to approximately match a digital key with a digital data signal.

41. (original) The retrieval device of claim 12 wherein said matching circuit is configured to approximately match an analog signal key with an analog data signal.

42. (original) A computer having a main processor, a working memory, a supplemental memory, and an approximate matching and pre-fetch processor, said pre-fetch processor being directly coupled to said supplemental memory and configured to approximately match a determined key representative of data sought to be retrieved from said supplemental memory with a data signal representative of a continuous stream of data read from said supplemental memory.

43. (new) A retrieval device for retrieving data from a database, the retrieval device comprising:

a programmable logic device in communication with a database, the programmable logic device being configured to determine whether a pattern match exists between a key that is representative of data desired to be retrieved from the database and a data signal that is representative of a continuous stream of data read from the database.

44. (new) The retrieval device of claim 43 further comprising a processor in communication with the programmable logic device, wherein the processor is configured to communicate the key to the programmable logic device.

45. (new) The retrieval device of claim 44 wherein the retrieval device interfaces the database with a system bus, and wherein the processor is further configured to (1) receive a search request from the system bus and (2) determine the key at least partially according the received search request.

46. (new) The retrieval device of claim 45 wherein the received search request was placed on the system bus by a central processing unit (CPU).

47. (new) The retrieval device of claim 45 wherein the received search request was placed on the system bus by a remote computer system via a communications network and a network interface that connect the remote computer system with the system bus.

48. (new) The retrieval device of claim 45 wherein the processor comprises one or more microprocessors operating under software control.

49. (new) The retrieval device of claim 45 wherein the processor comprises a programmable logic device.

50. (new) A retrieval device for retrieving data from a database, the retrieval device comprising:

a programmable logic device in communication with a database, the programmable logic device being configured to determine whether an approximate match exists between a key that is representative of data desired to be retrieved from the database and a data signal that is representative of a continuous stream of data read from the database.

51. (new) The retrieval device of claim 50 further comprising a processor in communication with the programmable logic device, wherein the processor is configured to communicate the key to the programmable logic device.

52. (new) The retrieval device of claim 51 wherein the retrieval device interfaces the database with a system bus, and wherein the processor is further configured to (1) receive a search request from the system bus and (2) determine the key at least partially according the received search request.

53. (new) A data retrieval system comprising:

a mass storage medium in which data is stored; and

a retrieval device in communication with the mass storage medium, wherein the retrieval device is configured to (1) receive a continuous stream of data from the mass storage medium, and (2) process the data stream to determine whether an approximate match exists therein with respect to a key that is representative of data sought to be retrieved.

54. (new) The system of claim 53 further comprising a system bus in communication with the retrieval device, wherein the system bus is configured to provide a search request to the retrieval device, and wherein the retrieval device is further configured to process the search request to determine the key.

55. (new) The system of claim 54 further comprising a processor in communication with the system bus, wherein the processor is configured to place a search request on the system bus for receipt by the retrieval device.

56. (new) The system of claim 54 further comprising a remote computer system in communication with the system bus via a communications network and network interface, wherein the remote computer system is configured to communicate a search request to the system bus for placement thereon and receipt by the retrieval device.

57. (new) The system of claim 56 further comprising a processor in communication with the system bus, wherein the processor is configured to place a search request on the system bus for receipt by the retrieval device.

58. (new) The system of claim 53 wherein the retrieval device is further configured to process the data stream to determine whether an approximate match exists via a pattern comparison between the key and the data stream.

59. (new) The system of claim 58 wherein the retrieval device is further configured to perform the pattern comparison via frameless matching.

60. (new) The system of claim 58 wherein the key is an analog key and wherein the data stream is an analog data stream.

61. (new) The system of claim 60 wherein the retrieval device is further configured to perform the pattern comparison by calculating a correlation coefficient that is indicative of a degree of correlation between the key and the data stream.

62. (new) The system of claim 61 wherein the retrieval device is further configured to determine that an approximate match exists if the correlation coefficient has a value larger than or at least equal to a predetermined threshold value.

63. (new) The system of claim 62 wherein the threshold value is user-specified.

64. (new) The system of claim 58 wherein the key is a digital key and wherein the data stream is a digital data stream.

65. (new) The system of claim 53 wherein the key in an analog key and wherein the data stream is an analog data stream.

66. (new) The system of claim 65 wherein the retrieval device is further configured to determine whether an approximate match exists between the determined key and the data stream by calculating a correlation coefficient that is indicative of a degree of correlation between the key and the data stream.

67. (new) The system of claim 53 wherein the key is a digital key and wherein the data stream is a digital data stream.

68. (new) The system of claim 53 wherein the retrieval device is further configured to determine whether an approximate match exists between the key and the data stream via frameless matching.

69. (new) The system of claim 53 wherein the search request is representative of a user-specified query.

70. (new) The system of claim 53 wherein the retrieval device is further configured to determine a starting location in the mass storage medium that represents the location at which the data stream is to begin.

71. (new) The system of claim 70 wherein the retrieval device is further configured to determine an ending location in the mass storage medium that represents the location at which the data stream is to terminate.

72. (new) The system of claim 53 wherein the retrieval device comprises programmable logic for determining whether an approximate match exists between the key and the data stream.

73. (new) The system of claim 53 wherein the retrieval device comprises programmable logic for determining whether an approximate match exists via a pattern comparison between the key and the data stream.

74. (new) The system of claim 53 wherein the mass storage medium comprises a database of DNA sequences.

75. (new) The system of claim 53 wherein the mass storage medium comprises a database of audio recordings.

76. (new) The system of claim 53 wherein the mass storage medium comprises an image database.

77. (new) A data retrieval system comprising:

a mass storage medium in which data is stored; and

a retrieval device in communication with the mass storage medium, wherein the retrieval device is configured to (1) receive a continuous stream of data from the mass storage

medium, and (2) process the data stream to determine whether a pattern match exists therein with respect to a key that is representative of data sought to be retrieved.

78. (new) The system of claim 77 further comprising a system bus in communication with the retrieval device, wherein the system bus is configured to provide a search request to the retrieval device, and wherein the retrieval device is further configured to process the search request to determine the key.

79. (new) The system of claim 77 wherein the key is an analog key and wherein the data stream is an analog data stream.

80. (new) The system of claim 77 wherein the key is a digital key and wherein the data stream is a digital data stream.

81. (new) The system of claim 77 wherein the retrieval device comprises a programmable logic device configured to process the data stream to determine whether a pattern match exists therein with respect to a key that is representative of data sought to be retrieved.